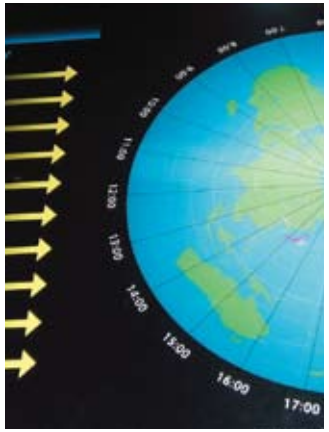
E-2 Earth Orbital Calendar

It takes one year for the Earth to travel around the Sun. The position of the globe is where the Earth is today in terms of its orbit around the Sun (orbital path). The constellation that is in front when you stand in front of the Earth and look at the Sun is today's birth constellation. Try standing in front of your birthday on the orbit ring. The constellation that is in front of you is your birth constellation.

E-3 Earth's Rotation causes Night and Day



This exhibit, which represents the Earth when looking at it from the North Pole, makes one complete turn every 24 hours. When Japan comes out of the shadowy part as a result of the Earth's rotation, it is morning. At the same time, on the opposite side of the Earth, New York moves from the Sun-lit part into the shadowy part. Evening has come and it will soon be nighttime. The Earth revolves every 24 hours, which means that it turns 15 degrees every hour.

E-7 The Color of the Sky

The light from the Sun is made up of many colors, such as red, orange, yellow, yellowish green, green, blue, and purple. Compared to red and orange lights, the blue and purple lights are easily scattered by bumping into molecules in the sky. With this exhibit, it is possible to experiment with the position of the Sun in the daytime and sunset. You will see that depending on the Sun's position, the light travels different distances and that based on this, the colors of the light change.

E-10 Axial tilt and the Seasons

The seasons in Japan change from spring to summer, to autumn, and winter. This happens because the Earth's axis is tilted in relation to the Sun, and the angle at which the Earth receives the Sun's light changes. This exhibit represents the Earth that continues to rotate while being tilted in relation to the Sun. By turning the handles, you can see how the light from the Sun that reaches Japan changes over the course of a year.

E-11 Sun Angle and the Amount of Heat Energy

If the Earth receives the same amount of energy from the Sun throughout the year, why are summers hot and winters cold? In this exhibit, the Japanese islands are made from solar batteries, and the amount of energy that the ground surface receives is represented by electric light. When the Sun angle changes, the amount of energy received by the ground surface also changes. Find out how the Sun angle and the amount of the energy that the ground surface receives changes depending on whether it is summer or winter.

E-14 Where Is the moon now?

During a full moon, the Sun sets, the moon rises, and then the moon sets when dawn comes. However, during a half-moon, there are times when you can see a white moon even in the daytime. The moon revolves around the Earth in about 27.3 days. This exhibit represents the relationship between the Sun, Earth and moon for 24 hours nonstop. Try looking at the exhibit and imagining that the person on the Earth is you.

THE EARTH

Exhibit Guide

SENDAI ASTRONOMICAL OBSERVATORY
仙台市天文台

E-1 Earth Time Scope

How did the Earth come to be as it is today?

E-2 Earth Orbital Calendar

Find out the position of the Earth in its orbit around the Sun.

E-3 Earth's Rotation causes Night and Day

When it is daytime in Sendai, it is nighttime in New York. Why is this?

E-5 Aurora

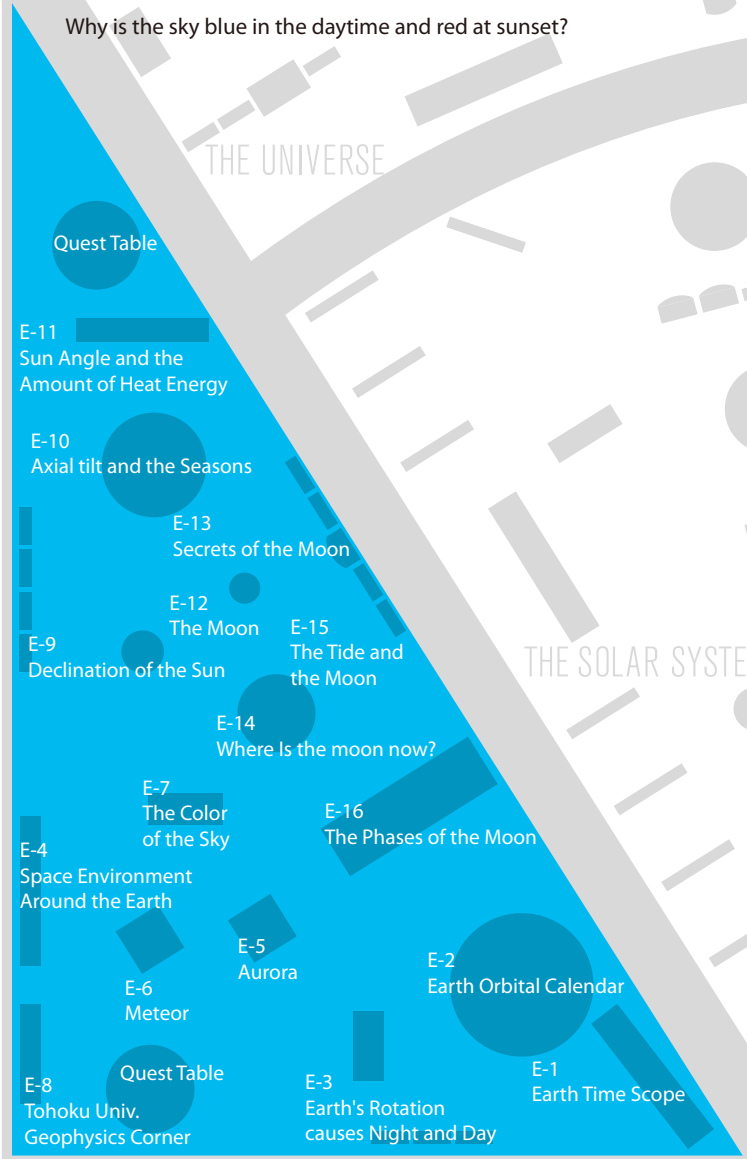
Why is it not possible to see the aurora in Sendai?

E-6 Meteor

What really are the meteors that you see in the night sky?

E-7 Color of the Sky

Why is the sky blue in the daytime and red at sunset?



E-9 Declination of the Sun

Learn about the difference in the Sun's height in the summer and winter.

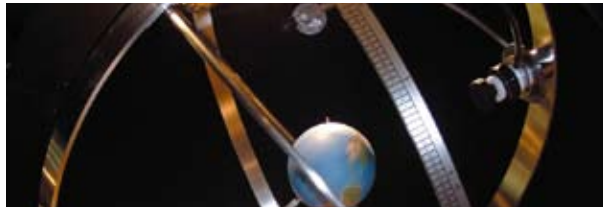
E-10 Axial tilt and the Seasons

The angle at which the light from the Sun hits the Earth changes according to the seasons.

E-11 Sun Angle and the Amount of Heat Energy

Summers are hot and winters are cold. Why is this?

E-14 Where Is the moon now?



The moon becomes visible at night. Where is it now?

E-16 The Phases of the Moon

Experience the phases of the moon, with you as the Earth.